Remarks

Status of the Claims

The Office

rejected Claims 1-26, 29, and 30 35 U.S.C. 102(b) as anticipated by U.S Patent 5,568,400 (*Stark*);

rejected Claim 27 under 35 U.S.C. 103 as obvious in view of Stark and U.S Patent 5,682,152 (*Wang*);

rejected Claim 28 under 35 U.S.C. 103 as obvious in view of Stark and U.S. Patent 6,694,020 (*Benesty*).

In this response, Applicant:

Amend certain of the Claims to clarify definitions from the specification;

Identifies limitations not taught by the cited art, and traverses the rejections under 35 U.S.C. 102 and 103.

Comparison with *Stark*

Stark generally concerns the establishment of a library of reference measurements, where each entry in the library corresponds to some particular component. A sample measurement can then be corrected for the presence of components that have been identified in the library. *Stark's* invention corrects a sample measurement at specific wavelengths based on the response of components in the library at the same wavelengths.

In contrast, Applicant's invention concerns the correction of a measurement for time-based variation, without any *a priori* knowledge of the components to be corrected. Generally, Applicant's invention involves the tracking of temporal variations in the characteristics of a reference having a known response. Those temporal variations can then be correlated with temporal variations in measurements of samples similar to the sample of interest. Note that the time-based correlation does not require the identity of components, or even the use of similar wavelengths. The method identifies characteristics of sample measurements that vary in time like some, possibly unrelated, characteristics of reference measurements. A measurement of a sample of interest can then be adjusted to correct for variations by using the correlation and a measurement of the reference.

Claims 1, 12, 13, and 22

Applicant has amended Claims 1, 12, and 13 to make it explicit that the variations recited are temporal variations. Claim 22 originally had the time-based nature of the correction explicity recited. Claims 1, 12, 13, and 22 recite at least two limitations that are not taught or suggested by *Stark*: measurement of temporal variations, and several measurements of a reference. As discussed above, *Stark* teaches correcting for specific components, and has no mention of tracking, identifying, or correcting based on temporal variations. Also, Claims 1, 12, 13, and 22 include the limitation that several measurements are made of a reference. *Stark* has no such teaching. This distinction is not surprising since *Stark* concerns corrections based on components; there is no need in *Stark* to make multiple measurements. On the other hand, Claim 1 concerns corrections based on variations over time, so multiple measurements are required. Since *Stark* does not teach or suggest all the elements of Claims 1, 12, 13, and 22, there is no *prima facie* case of anticipation or obviousness. Applicant submits that Claims 1, 12, 13, and 22, and Claims 2-11, 14-15, 18-19, 23-28, and 30 depending therefrom, are in condition for allowance.

Claims 3 and 4

Claims 3 and 4 adds the further limitation that the reference measurements include a nonspectral sensor output. Since *Stark* is concerned only with correction of spectral results for individual components, *Stark's* only sensor is a spectrometer. In contrast, the inventions of Claims 3 and 4 can accommodate nonspectral sensors. The inventions of Claims 3 and 4 can include spectral measurements of a reference with separate measurements such as temperature or humidity. Variations in the similar sample measurements can then be correlated with variations in the

reference measurements and with the separate measurements. As an example, the similar sample measurements might correlate with certain reference variations only when the temperature is rising. Since *Stark* does not teach or suggest this limitation, there is no *prima facie* case of anticipation or obviousness of Claims 3 and 4. Applicant submits that Claims 3 and 4 are in condition for allowance.

Claims 5 and 6

Applicant has amended Claims 5 and 6 to explicitly recite that the reference measurements and the sample measurements include measurements at different wavelengths. Since *Stark* only corrects for response at the same wavelength of the reference, *Stark* does not teach any use of noon-overlapping wavelengths. In contrast, the inventions of Claims 5 and 6 can correct at one wavelength based on reference variations at another wavelength, since the correlation based on similar temporal variation does not require matched wavelengths. Since *Stark* does not teach or suggest this, there is no *prima facie* case of anticipation or obviousness of Claims 5 and 6. Applicant submits that Claims 5 and 6 are in condition for allowance.

Claims 7 and 8

Applicant has amended Claims 7 and 8 to explicitly recite that the physical property is other than a spectral response. As discussed in the context of Claim 3 and 4, *Stark* has no teaching to include anything other than spectral data. In contrast, the inventions of Claims 7 and 8 can include additional information to enhance the correction, in this case information relating to non-spectral physical properties of the reference. Since *Stark* does not teach or suggest the inclusion of physical properties other than spectral response, there is no *prima facie* case of anticipation or obviousness of Claims 5 and 6. Applicant submits that Claims 7 and 8 are in condition for allowance.

Claims 16-17, and 21

Claims 16, 17, and 21 all recite a limitation that reference measurements be taken at a plurality of measurement conditions. *Stark* does not teach or suggest this limitation – *Stark* is concerned with correcting for individual components, and consequently has no teaching of tracking changes based on time (as previously discussed) or measurement conditions (as in Claims 16-17 and 21). *Stark* teaches collecting measurements from a plurality of references (to build the library of component information), but has no mention of collecting measurements at different measurement conditions. Further, the inventions of Claims 16-17 and 21 determine correlations between changes in similar sample measurements and changes in the reference measurements, allowing variations in the reference measurements that are dependent on measurement conditions to be used to correct sample measurements that are also dependent on measurement conditions, without any knowledge of the conditions themselves or the relationship between the reference and the sample. Rather, the common variation patterns are used to correct the sample measurement. Since *Stark* does not teach or suggest this, there is no *prima facie* case of anticipation or obviousness of Claims 16-17 and 21. Applicant submits that Claims 16-17 and 21, and Claim 20 depending therefrom, are in condition for allowance.